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Beyond *Perestroyka*: The Soviet Economy in Crisis

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Summary

Six years after Mikhail Gorbachev launched the policies and reforms that have come to be known as *perestroyka*, the Soviet economy is in crisis. Output is declining at an accelerating rate, inflation threatens to rage out of control, interregional trade has broken down, and the center and the republics are engaged in a fierce political struggle over the future of the multinational state. Since last fall, rather than responding to these problems with reforms, union authorities have attempted to reassert central control over the economy and politics with counterproductive results. Although a recent accord between the center and the republics may impart new momentum to reform, previous agreements of this sort have proved fragile. Even if reform proceeds anew, tough economic times are in store for the Soviets. If meaningful reform is not carried out, the economic future will be totally bleak.

Economy in Turmoil

The accelerating deterioration of the Soviet economy goes beyond declining output and rising inflation. Worsening imbalances between supply and demand have contributed to a breakdown of the distribution system, which has been aggravated by the efforts of regional authorities to insulate factories and consumers on their territories from the effects of shortages. The USSR's economic relations with the rest of the world also are suffering. Hard currency imports exceeded exports in 1990 for the second straight year, while the combination of a rising hard currency debt and a backlog of late payments to Western suppliers brought a credit crunch.

The economy's deterioration results largely from the central planning system's chronic weaknesses, which have been compounded by partial and ad hoc economic reforms, excessive growth in the money supply, and regional protectionism. The Soviet economy's traditional discipline — of central planners setting output targets for most products and allocating the supplies needed to produce at these levels — has eroded drastically under *perestroyka* but has not been replaced by the discipline of the marketplace. Moreover, rapid growth in the money supply — fueled by large budget deficits — has led to a scramble for goods, rising inflation, and acute shortages. As shortages have worsened, republic and local authorities have banned shipments of goods outside their borders, disrupting longstanding trade patterns and denying badly needed supplies to producers.

The Soviet economic decline also reflects the impact of policy mistakes and mismanagement. The budget deficits that brought monetary expansion and rising inflation were a serious blunder. In addition, the leadership's policy of shifting resources from investment and defense to consumption, although long overdue, has been mismanaged. Inadequate investment in basic materials and transportation has contributed to declining output and shortages of these vital goods and

services, and increases in the defense industry's output of civilian goods have fallen short of overly ambitious targets. Also, efforts to step up imports to improve supplies of consumer goods quickly have left the USSR with a rising hard currency debt.

Mounting political and social tensions have exacerbated Soviet economic difficulties. Continuing center-republic clashes have contributed to a worsening confusion of economic authority, and ethnic disputes have brought a variety of conflicts — many of them violent — between and within republics. Strikes remain a growing problem, and popular concern over the environment has forced plant closures that have made a substantial dent in output.

Advances and Halts on Reform

Gorbachev's economic program, which the Soviet legislature approved in October, calls for replacing Marxist with market economics and, if strictly implemented, would deregulate most prices, sell off a substantial portion of state assets, and introduce an element of genuine competition to an economy long dominated by monopolies. Like the failed reform programs of the past, however, it places much of the responsibility for implementation on the central government bureaucracy — the very institution that stands to lose the most from the dismantling of the old system. Moreover, the program's vague provisions and timetables have made it subject to selective implementation and delay by the political leadership. Indeed, in the several months that followed the legislature's approval of the program, Gorbachev's implementing decrees gave a clear priority to stabilization, to be accomplished largely by administrative measures and a new reliance on the police and Committee for State Security (KGB) to enforce the center's economic decrees.

However, economic reform legislation passed in 1990 remains on the books and could stimulate the development of private economic activity and markets if the political climate improves. Moreover, the republics' growing self-assertiveness has given reformers reason to believe that their cause is no longer completely hostage to changes in the commitment of the union authorities. Private economic initiatives also continue to expand and find new outlets. Cooperative business production has grown rapidly in spite of cumbersome and frequently changing regulations, and the sprouting of commodity exchanges in cities from the Baltic republics to Siberia holds promise for the development of a market-oriented trade system.

Grim Economic Outlook

There is no doubt that 1991 will be a worse year for the Soviet economy than 1990, and it is likely to be radically worse. The center's recent policy of seeking to stabilize the economy through primarily administrative means and the republics' accompanying refusal to comply with the center's orders already have led to a sharp drop in production. If this standoff continues, real gross national product (GNP) most likely would decline by 10 to 15 percent and the annual inflation rate could easily exceed 100 percent.

An alternative strategy of stepping up repression to control the republics and enforce the center's economic decrees could temporarily stem the decline in output and the rise in prices. More likely, however, it would provoke popular resistance, which could lead to conditions in which the fall in real GNP would exceed 15 percent and inflation would spiral out of control. Moreover, increased repression would not address the underlying systemic problems of the Soviet economy nor would it help to establish a foundation for future progress.

Another possibility is that the center-republic accord of 23 April could serve as a basis for a sustained improvement in center-republic relations and the renewal of reform. Even under these circumstances, the decline in Soviet GNP this year probably would still be close to 10 percent in real terms, and inflation would reach a high double-digit rate. Prospects for the next few years would improve, however, and the longer term forecast clearly would be brighter.

The message that all of these scenarios have in common is that the Soviets, including the defense sector, will face hard times in the next few years regardless of which path they choose. The crucial question is not whether continued austerity will be required but when the end will be in sight. If reform acquires a new momentum, the Soviets at least will have embarked on a path with the potential to lead to economic recovery. If economic reform continues to be postponed, the Soviets face a future of seemingly endless and worsening crises.

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Beyond *Perestroyka*: The Soviet Economy in Crisis

The System in Crisis

After six years under Mikhail Gorbachev, the Soviet economy is in crisis. This crisis has several elements: an accelerating decline in production, worsening inflation, a breakdown in interregional trade, and a fierce political struggle between the center and the republics over the future of the multinational state. Rather than respond to these problems with reforms, union authorities have been attempting to reassert central control over the economy and politics since last fall. This approach has been counterproductive. Although a new approach to the country's economic and political ills may be in the offing if the center-republic accord signed in late April bears fruit, previous agreements of this sort have proved fragile and fleeting.

Sharp Deterioration in Economic Performance

The Soviet economy had a bad year in 1989, but the period since January 1990 has been much worse. For the first time since World War II, the Soviets have acknowledged that overall output is declining — by 2 percent in 1990 and by a startling 8 percent during the first quarter of 1991 compared to the same period last year. CIA and DIA estimates, while subject to greater uncertainty than in previous years, continue to indicate that the decline has been greater than officially claimed. Also, inflation is accelerating sharply. Retail prices rose by an estimated 14 percent in 1990, by a reported 24 percent in the first quarter of 1991, and by an average of more than 60 percent on 2 April of this year as a result of a presidential decree.

Measures of output and inflation alone do not fully reflect the extent to which imbalances between supply and demand have worsened or indicate how explosive the economy's problems have become. Shoppers with huge accumulations of excess rubles have swept store shelves clean. In addition, rising prices and proliferating shortages have made consumer frustration a growing liability for leaders at all levels of government, especially as the population becomes increasingly aware of how poorly Soviet living standards compare with those in other countries.

Shortages of energy and basic industrial materials, such as steel and chemicals, also have intensified, and their impact has spread rapidly across the economy. Shortfalls in production of metallurgical coal, for example, have contributed to a reduction in steel output, which in turn has left machine builders short of materials. Factory managers, who can no longer rely on ministry and party officials to help them find supplies, have spent more and more time searching for crucial inputs and arranging barter deals. Even the defense industries appear to be less insulated than in the past from difficulties experienced in the rest of the economy. In an open letter in *Pravda* last September, for example, 45 high-level defense industry managers complained that the USSR's economic problems have caused increasing disruptions in their enterprises and "massive losses" of skilled workers.

Regional Fragmentation

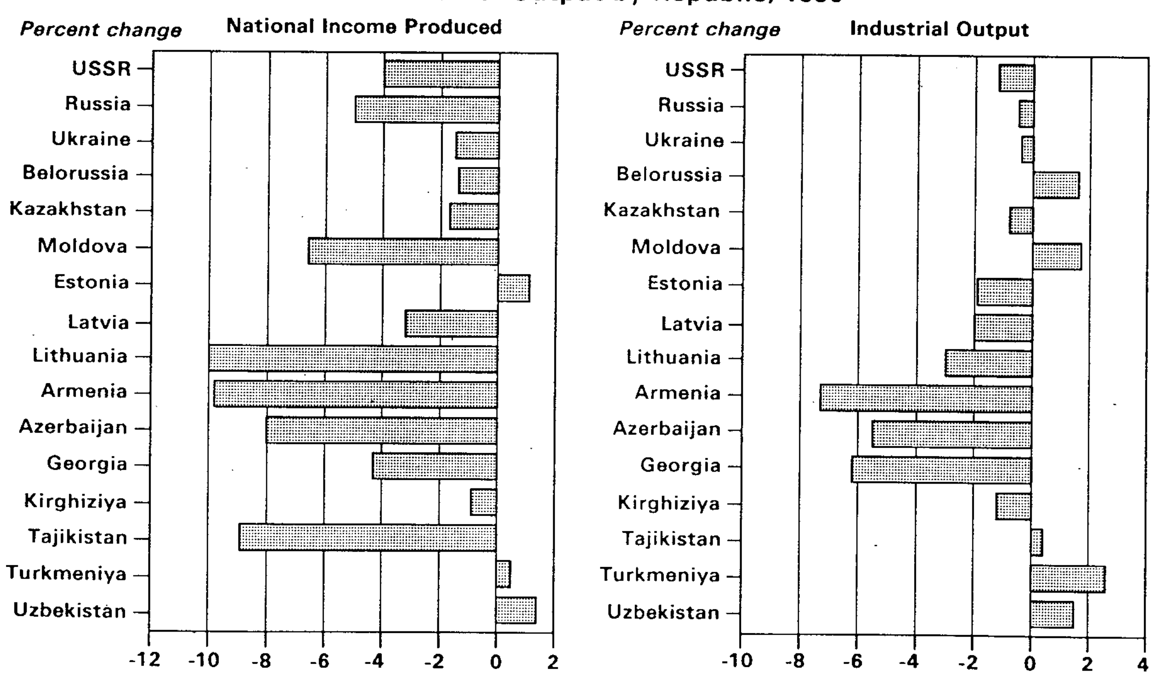
The regional fragmentation of the Soviet state and economy also is proceeding at an increasingly rapid rate. Some republics — Estonia, Latvia, and Lithuania in the Baltic region and

Armenia and Georgia in the Caucasus — are bent on independence regardless of what happens in the rest of the Soviet Union. Moldova, on the border with Romania, also favors eventual independence, but political and economic obstacles could force it to join a reformed union at a later date. The leaders of the central government and other republics have been locked in disagreement over a wide range of issues: the shape and content of the union treaty, the strategy and pace of market-oriented economic reforms, and the control over natural resources, budget revenues, banks, the money supply, and earnings from hard currency exports. This political gridlock has impeded the efforts of leaders at all levels of government to address the economy's problems.

The efforts of republic and local authorities to insulate their own territories from the effects of ubiquitous shortages have aggravated the nationwide breakdown of distribution. Republics producing large amounts of food and other consumer goods have been withholding deliveries to central stocks and customary trading partners to try to keep their own populations supplied. The Ukraine and Kazakhstan failed to meet targets for grain deliveries to the state in 1990, and Georgia restricted shipments of citrus fruit and tea, its primary exports to the rest of the USSR. Many republics held back on deliveries of livestock products, which have been especially valuable in barter transactions. The main losers as a result of these disruptions in food deliveries have been industrial cities, other nonagricultural regions, and the food processing industry.

Regions producing key raw materials, such as oil, coal, and cotton, also have begun to ignore centrally mandated delivery targets in an effort to deal for supplies that the center cannot guarantee. The Bashkir autonomous republic in Russia bartered oil for Estonian consumer goods last year, while Azerbaijan concluded a similar deal with Turkey. Uzbekistan withheld cotton from

USSR: Official Soviet Statistics on National Income Produced and Industrial Output by Republic, 1990[1]

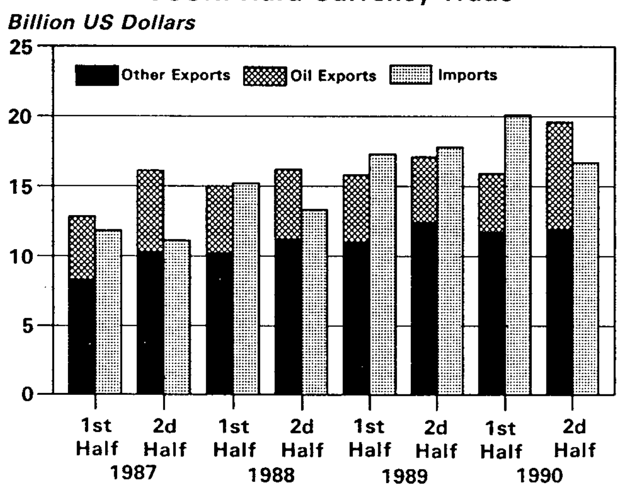


[1] Source: Soviet press releases.

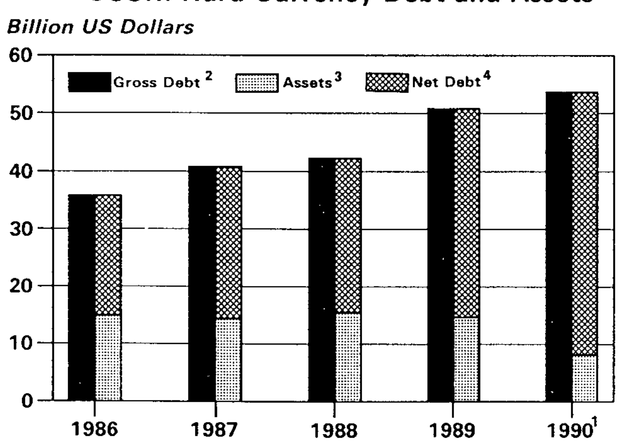
the state in hopes of increasing hard currency exports.

As these problems spread across the USSR, few regions escaped the decline in output in 1990. Official Soviet statistics indicate that in 1990 only three republics – Estonia, Turkmeniya, and Uzbekistan – registered increases in national income (a Soviet measure of total output excluding services). Some of the steepest declines occurred in republics experiencing interethnic violence or striving for independence – Armenia, Azerbaijan, and Lithuania.

USSR: Hard Currency Trade



USSR: Hard Currency Debt and Assets



1 Preliminary figures.
2 Total long-, medium-, and short-term obligations.
3 Cash holdings in Western banks as reported by the Bank for International Settlements.
4 Gross debt less assets.

In an ominous sign for future inflation, the dispute over the transfer of budget revenues from the republics to the central government has escalated sharply. Shortfalls in republic contributions reportedly have left the union budget with a 27-billion-ruble deficit in the first quarter of 1991 – more than double the expected amount of 11 billion rubles.

Problems in Foreign Economic Relations

As a result of the ills afflicting the domestic economy, Soviet foreign economic relations are suffering, and the problems in foreign economic relations in turn are magnifying the domestic economy's problems. Hard currency imports, which jumped by more than 50 percent from 1987 to 1989, continued to climb in the first half of 1990. The Soviet leadership's efforts to ease shortages of consumer goods were largely responsible for this import surge, and enterprises exercising newly acquired rights to buy directly from Western businesses also played a role. Hard currency exports also rose but could not keep pace with imports, and the trade deficit for the first half of last year reached a record $4 billion (Appendix B).

The USSR got some breathing space in the second half of 1990. Heightened tensions in the Middle East led to a rough doubling of the hard currency prices of oil exports, and a reassertion of central control reduced hard currency imports. However, many of the import cuts came from supplies, particularly of steel products and chemicals, that were badly needed for domestic production.

To finance their burgeoning import bill, the Soviets nearly doubled their total borrowing from the West from 1987 to 1989. In late 1989, they also began to run up an unprecedented backlog of late payments to Western suppliers. With these arrears coming on top of mounting domestic political and economic turmoil, the Soviets found Western banks unwilling to provide new loans last year. To alleviate the resulting credit crunch, the USSR has drawn down cash reserves in Western banks, stepped up gold sales, and obtained financial assistance from Western governments. Nonetheless, its hard currency position remains weak.

The Soviets' economic problems and the profound transformation under way in the region have taken an especially heavy toll on Soviet-East European trade. The USSR ran a deficit in trade with Eastern Europe in 1990, when oil exports fell and imports remained about the same as in 1989. In the first quarter of 1991, when most of these longstanding trade arrangements changed to a hard currency basis, the Soviets slashed imports. Because they cut exports by much less than imports, the Soviets ran a trade surplus with Eastern Europe and earned badly needed hard currency. However, the costs have been high. The Soviets have lost badly needed imports of industrial supplies and consumer goods, and East European exports have suffered a severe blow.

In another dramatic change this year, the USSR will receive significant aid from the rest of the world. The Soviets have lined up about $14 billion in grants, loans, and credits backed by noncommunist governments that they must rely on during 1991 to maintain imports of needed goods. Italy and Germany are the largest donors of overall financial assistance, but about one-third of the aid to be disbursed will come from Arab states and South Korea. Moreover, Soviet economic aid to the less developed world is dropping sharply. Longtime clients such as Mongolia and Vietnam are slated to be virtually stricken from the aid roster this year.

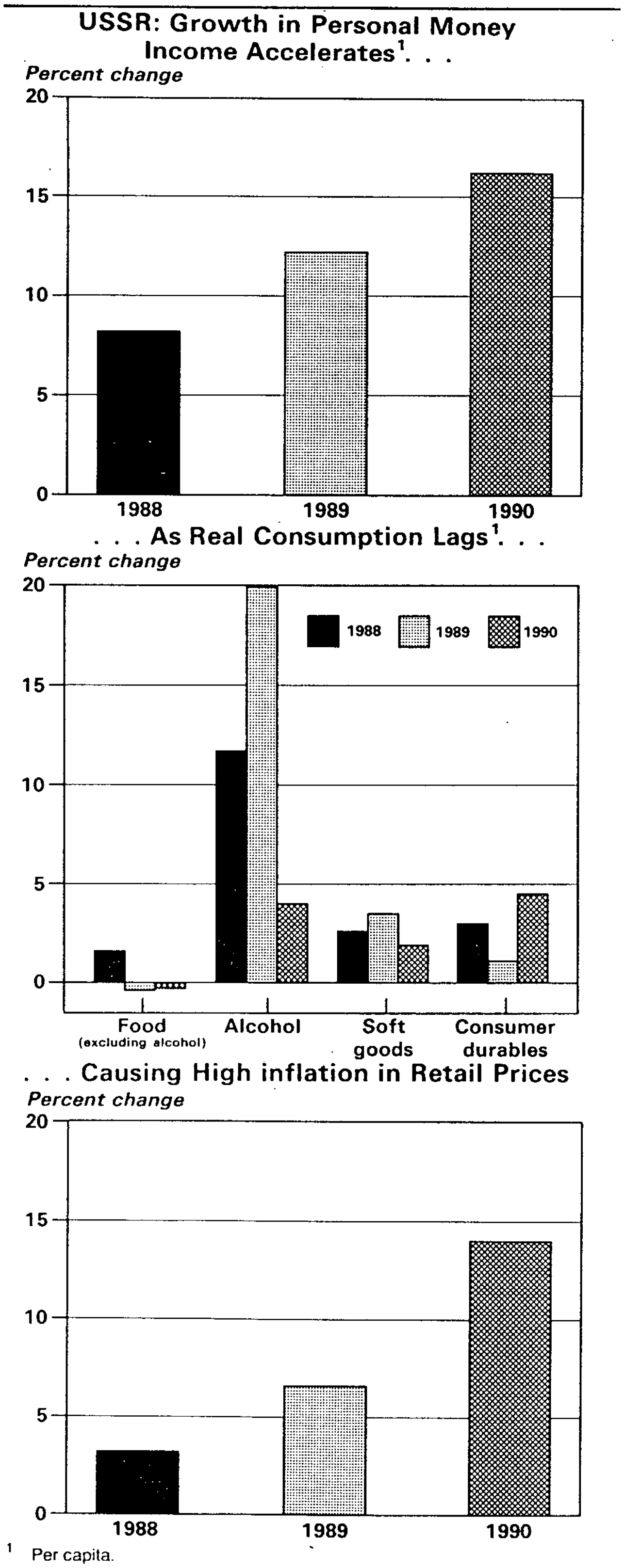
Erosion of Living Standards

Since late 1988, Soviet leaders have attempted to shift resources from investment and defense to consumption to improve living standards. This policy has produced few benefits for Soviet consumers, who have complained increasingly that inflation and shortages have reduced their welfare sharply. Although the estimated consumption of goods and services adjusted for inflation registered a small per capita increase in 1990, much of this increase reflected higher output of alcohol and expensive household appliances and consumer electronics. Moreover, the imports and drawdowns of inventories that helped boost consumption in 1990 cannot be sustained.

Problems on the supply side, in any event, have been only partly to blame for the erosion of living standards. According to official Soviet statistics, personal money incomes leaped 16 percent per capita in 1990, overwhelming the small improvement in supplies of consumer goods and services. One result was a surge of inflation. Estimates indicate that retail prices of consumer goods sold in state stores and at farmers' markets climbed about 14 percent in 1990, roughly twice as fast as in 1989. Black market prices almost certainly went up even faster. In addition, because controls still kept most prices from rising enough to balance supply and demand, some inflation was repressed, resulting in shortages and a scramble for goods. According to one Soviet report, the "availability" (not further defined) of basic food items declined from 90 percent in 1983 to 22 percent in 1989 and 11 percent in mid-1990.

With shortages leaving state store shelves bare, some lucky consumers have had access to special distribution channels, such as workplace sales of food and appliances. Arrangements of this kind have spread rapidly in recent years, helping some segments of the population – especially workers at large factories – but reducing supplies of consumer goods available to the general public.

In an effort to protect residents of their areas from shortages, first local and now republic-level authorities throughout the Soviet Union have introduced a rapidly growing number and variety of rationing schemes. More and more cities have issued coupons for consumer goods in short supply, such as meat and sugar. In the



Baltic republics and in many cities, including Moscow and Leningrad, consumer goods are sold only on proof of residence. The most extensive rationing scheme to date – introduced by the Ukraine in November 1990 and adopted by Moldova in March 1991 – requires purchasers to provide coupons distributed along with their pay or pensions, in addition to money, for the vast majority of their purchases from state stores. Also, as mentioned earlier, several republics have banned the shipment of consumer goods outside their borders, in what one Soviet economist has called a "bacchanalia of local protectionism."

Consumers whose needs are not covered by special distribution channels or rationing have been left to rely to an ever greater extent on black market purchases, if they can afford the higher prices, or on potluck in state stores. Press reports indicate that many shoppers buy goods they do not want themselves and barter with family members and friends for what they do need, and almost everyone stocks goods for future use. One Soviet survey found that 9 out of 10 respondents maintained such stocks in 1989, up from 1 out of 4 in 1988. In November 1990, a deputy trade minister placed the value of household hoards at 120 to 130 billion rubles – roughly one-fourth of the value of retail sales last year.

As miserable as the consumer's lot was in 1990, it has worsened since the beginning of this year. Official Soviet statistics indicate that output of manufactured consumer goods in the first quarter of 1991 was 3 percent lower than in the same period last year, while money incomes increased by 24 percent. Two presidential decrees implemented in January also added to rising consumer frustration. A 5-percent sales tax was imposed on all goods, even the most basic consumer necessities, and a currency changeover resulted in the confiscation of 50- and 100-ruble notes that could not be proved to have been earned.

Probably the greatest blow to consumers

occurred on 2 April 1991, when much of the repressed inflation that has built up in recent years was transformed into open price increases. Retail prices of consumer goods were raised 60 to 70 percent on average, with larger increases in food prices that were particularly alarming for the low-income population. Despite the compensation payments accompanying these price hikes, the purchasing power of people's incomes is estimated to have fallen 15 to 20 percent on average.

Cutbacks in Investment

Although the regime's shift of resources toward consumption has done little to improve living standards, it has taken a substantial bite out of investment at a time when the Soviet economy is in dire need of modernization. According to official Soviet statistics, state investment in 1990 was 4 percent less than in 1989, reflecting a sharp drop in centrally financed investment that an increase in enterprise-funded investment partly offset. Completions of investment projects also declined, and only two-fifths of the high-priority projects included in state orders were finished – down from one-half in 1989. This decrease in project completions included much infrastructure intended to benefit consumers, such as housing, schools, preschools, hospitals, and clinics. Meanwhile, the backlog of unfinished construction reportedly swelled by 11 percent.

The investment downturn in 1990 reflected a decrease in domestic output of machinery and an especially sharp drop in construction activity. Inadequate supplies of construction materials and equipment, such as bulldozers, cranes, and excavators, were part of the problem. In addition, state construction organizations lost workers to cooperatives, where wages reportedly were nearly one-third higher.

Defense Spending Down

Defense program reductions in 1990 followed the same general trends that developed in 1989. CIA and DIA estimates indicate that the overall annual decline in defense spending was about 6 percent in both years. The driving forces behind these cuts have been the poor state of the economy and the leadership's desire to reduce the budget deficit and shift resources to civilian production. On the arms control front, the Soviets have tried to ease requirements for new weapons by constraining Western force modernization while posturing their forces for Strategic Arms Reduction Talks and Conventional Forces in Europe agreements.

CIA and DIA estimate that procurement outlays, which account for almost half of total defense spending, fell by about 10 percent in each of the last 2 years. Percentage reductions were distributed almost equally between strategic and general purpose forces. The heaviest cuts in both 1989 and 1990 came in the procurement of ground force weapons: artillery, light armored vehicles, and particularly tanks. Aircraft procurement declined as well.

Expenditures on other major defense components also have fallen over the past 2 years, although not quite as steeply as procurement. Personnel outlays reflect a decrease of about 500,000 in the number of troops since 1988. The decline in spending on operations and maintenance results primarily from a downturn in space launch activity, as well as from shrinking inventories and a slower pace of training and exercises. Available evidence suggests that outlays on research and development leveled off in 1989 and declined in 1990, although estimates for this category are much more uncertain than for the other components of defense spending.

Sources of Difficulties

The current Soviet economic problems stem from a variety of sources: an accelerating breakdown of the traditional system of managing the economy from the center, a progressive loss of control over financial flows, a mismanaged shift of resources from investment and defense to consumption, and rising political and social tensions.

Breakdown of the Traditional System

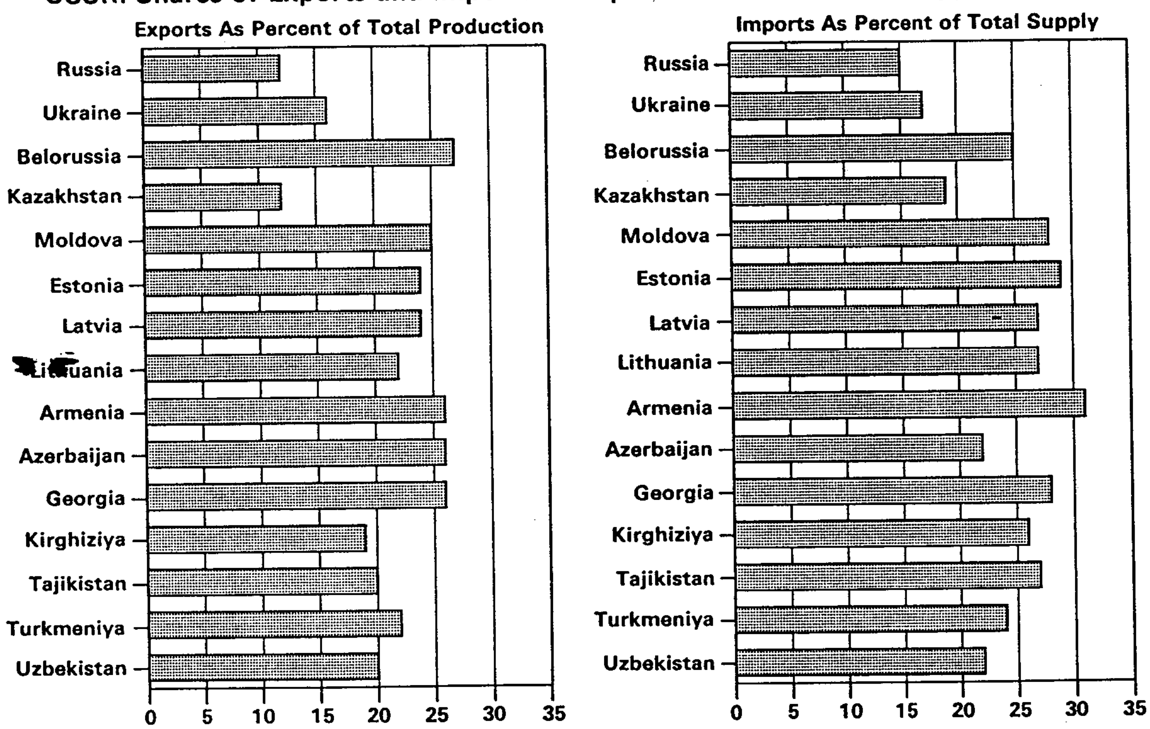
The traditional Soviet economic system — with central planners setting output targets for most products and allocating the supplies needed to produce at these levels — was always inefficient. The accompanying allocation procedures and excessive secrecy also have condemned the USSR to technological backwardness. In short, the system was relegating the USSR to the status of a developing country. Nonetheless, it was a functioning system with fairly stable rules. In 1988 and 1989, however, partial economic reforms seriously weakened the system, and, since early last year, its erosion has accelerated rapidly and developed a regional dimension. The Soviet Union has gone from stagnation into decline.

Early in the *perestroyka* years, enterprises were instructed to earn profits; however, most prices, which did not reflect supply and demand accurately, were not changed until 1991. Even the realigned prices now in effect take little account of demand, although they do reflect current production costs better. Under these conditions, prices have not stimulated increases in production of the goods that are needed most urgently. Moreover, controlled prices have combined with inflationary pressures — fueled by excessive budget deficits — to create steadily worsening shortages.

Another problem is that the "direct links" between buyers and sellers that were supposed to reduce the need for central planning have developed with difficulty. The lack of progress stems partly from the continuing efforts of bureaucrats in ministries and supply organizations to cling to their old functions. The longstanding monopolization of industry and the recent plague of regional protectionism have exacerbated this problem.

Monopoly producers, whose development

USSR: Shares of Exports and Imports in Republic Production and Supply, 1988 [1]



[1] Source: *Narodnoye khozyaystvo SSSR v 1989 godu*, P. 635. Data include both interrepublic and foreign trade and are based on domestic ruble prices.

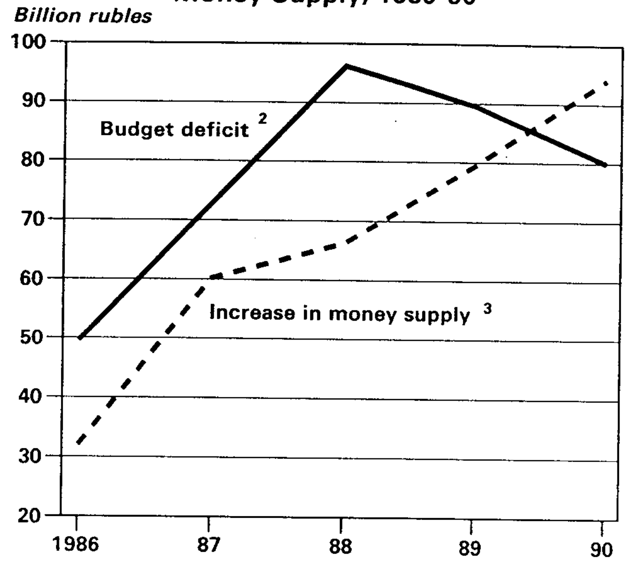
central planners actively encouraged, dominate many Soviet industries. For example, single factories, each in different republics, produce the USSR's entire output of potato, corn, and cotton harvesting machinery. Single factories also account for more than half of all production of automobiles, freezers, and oil and gas drilling rigs. Under these conditions, shortfalls of output at one plant cannot be made up elsewhere and are spread rapidly across the economy.

Republic and local authorities' efforts to protect the factories and consumers on their territories from the economy's general deterioration became a major factor in the erosion of the traditional system in 1990. In the past, Soviet economic development policy encouraged most republics to specialize in certain kinds of production and to trade with each other rather than become self-sufficient. For instance, the Ukraine is a major center of heavy industry, while Uzbekistan specializes in cotton. Given these circumstances, republic bans on shipping goods outside their,borders have been particularly disruptive. On a more positive note, the republics have moved quickly to sign economic agreements with one another to assure deliveries of needed supplies. However, the terms of most of the basic agreements are vague and often cannot be enforced.

Loss of Financial Control

For all but the first year of Gorbachev's tenure, the Soviet government has run large budget deficits, and the 1990 deficit further fueled inflationary pressure. Official claims that the 1990 deficit was slightly below the limit the Supreme Soviet approved are suspect, partly because the claimed figure for total budget revenues appears inflated compared with the information available on individual revenue categories. In addition, a thorough examination of the Soviet budget by the International Monetary Fund indicates that off-budget expenditures to support agricultural prices should be added to the official deficit.[1] Whatever the actual deficit was, the government's efforts to sell interest-bearing securities to finance the deficit fell far short of plan. As in the past, therefore, the deficit was funded almost entirely by adding to the money supply, which increased by an estimated 15 percent in 1990. The excessive budget deficit and rapid growth of the money supply, in turn, made a major contribution to the leap in personal money incomes.

USSR: Budget Deficit and Increase in Money Supply, 1986-90 [1]



1 Source: International Monetary Fund et al., *A Study of the Soviet Economy,* (Paris, 1991), Volume 1, pp. 54, 130.
2 Plan for 1990.
3 Money supply is defined as sum of currency, demand deposits, and time deposits; figure for 1990 is projection.

Fiscal and monetary problems multiplied rapidly in the first quarter of 1991. Budget outlays on subsidies rose sharply when wholesale prices were raised on 1 January, while retail price hikes were delayed, pending negotiation of a

1 International Monetary Fund, The World Bank, Organization for Economic Cooperation and Development, and the European Bank for Reconstruction and Development, *A Study of the Soviet Economy* (Paris: February 1991), Volume 1, p. 54.

center-republic agreement, until 2 April. The subsidy burden shifted to the republics starting this year, and, perhaps partly to cover that bill, republic governments withheld budget revenues from the central government. The center then was forced to create money to finance its expenditures. Now that retail prices are up, subsidies will be reduced sharply, but compensation payments to the population — financed by a combination of budget and enterprise funds — are so generous that they will add new fuel to inflationary fires.

Mismanaged Shift of Resources

The leadership's policy of shifting resources toward consumption is a move that was badly needed and long overdue, but the mismanaged implementation of this policy has led to disarray and confusion in investment and the defense industry. Skimping on investment in basic industrial materials has contributed to declining output and shortages of these vital supplies. Centralized investment in these industries was cut in 1990, and producing enterprises — which had rapidly

Defense Conversion: Meager Progress to Date

Gorbachev began expanding the defense industry's role in the civilian economy in March 1988 by subordinating 260 plants producing civil machinery to defense industrial ministries. In December 1988, he announced more extensive plans to convert defense plants to civilian production. Soviet officials have stated that more than 400 defense industrial plants and 100 civil industrial plants will be involved in conversion to some degree. Of these, only 6 defense plants, along with some 34 civilian plants, are planned to cease military production entirely.

Soviet claims about conversion must be interpreted carefully because their use of the term varies. In the strict sense of the word, conversion means the retooling of military production lines for civilian output; however, the Soviets also use the term to refer to the expansion of civilian output using excess floor space, the sale of military property to the civilian economy, the retooling of civil factories by the defense industry, the diversion of resources, the sharing of expertise, and the release of previously classified technical data.

Problems of Implementation

Soviet defense industrial managers have faced numerous problems in implementing conversion. In many cases, they have had to produce civilian goods with which they have had no experience. At the same time, like their civilian counterparts, defense managers have had to adapt to partial reforms of the economic system. Reduced military orders and increased retooling and retraining costs have complicated the increasing pressure to earn profits. Because of the priority treatment they enjoyed in the past, defense managers also have less experience in dealing with transportation and supply problems than managers in civilian industry. Moreover, workers faced with retraining, job transfers, and the end of higher wages and bonuses for military output have left the defense industry in substantial numbers.

Lack of Clear Strategy

Another major problem for the defense industry has been the Soviet leaders' lack of careful planning at a time when markets were not developed enough to allow producers to know what consumers really wanted. Enterprises were ordered to begin the conversion process before the regime recognized the financial burden this would impose. While the Soviets plan to invest a hefty 40 billion rubles in conversion during 1991-95 (about the same amount invested in metallurgy during 1986-90), only 9 billion rubles actually will be spent on retooling from military to civilian production. The bulk of the investment in conversion is earmarked for adding new civilian production capacities in the defense sector and not for further retooling military production lines. Last December, after many revisions and considerable debate, the government reportedly approved a conversion program drafted within the defense sector, but its funding and implementation await Supreme Soviet legislation.

dwindling profit margins before wholesale prices were raised this January — had few funds of their own to invest. Moreover, investment in transportation has been neglected for years. Premier Pavlov recently recommended adjusting priorities to maintain adequate investment in output not directly used by consumers.

Soviet officials have said that increases in the defense industry's output of civilian goods are offsetting only part of the drop in military production. Moreover, many defense industry managers are worried that the speed with which they have had to increase civilian production is causing them to lose valuable technical expertise acquired during their years of working for the military. A number of these managers have expressed interest in developing export markets and spin-offs of their traditional output; this would allow them to maintain military production capacity and remain solvent financially.

Moreover, efforts to increase imports to improve supplies of consumer goods quickly have left the USSR with a rising hard currency debt, which must be serviced in spite of falling oil production and the reluctance of commercial creditors to extend new loans. Hard currency problems led to some reductions in 1990 in imports of materials and equipment needed to sustain domestic production and much sharper cutbacks in the first quarter of 1991.

Declining Soviet Oil Production: How Western Technology Could Help

Although the USSR has some of the world's largest oil reserves and is still the world's leading oil producer, Soviet oil production has been declining markedly since it peaked in 1987. Output dropped by 6 percent in 1990 and appears headed this year for its lowest level since 1975. A combination of short-sighted investment policies, technological shortcomings, and substituting gas for oil is responsible for the decline in oil output. The standard Soviet practice of injecting water into reservoirs to force oil out as quickly as possible has left flooded fields, which require sophisticated equipment to recover the remaining oil. Moreover, corrosion is wearing out the production infrastructure faster than it can be replaced. Years of neglect of the oil equipment industry, however, have left it incapable of supplying either the quantity or the quality of the equipment needed.

The challenges of maintaining output from mature fields, coping with equipment shortages, and developing new fields are outpacing the USSR's technical capabilities and increasing its need for Western technology and assistance. In the near term, the most pressing Soviet needs for Western equipment and services include:

- Enough equipment, not necessarily state-of-the-art technology, to overcome chronic shortages of artificial-lift equipment, blowout preventers, drill bits and pipe, and oil tools.
- Modern rotary drill rigs or drilling services, specialized arctic drill rigs, and measure-while-drilling equipment.
- Social infrastructure, such as housing and schools, to improve the difficult living conditions of oil-field workers.
- Advanced exploration capabilities, either equipment or services, to locate small, deep, complex reservoirs.

Moreover, to turn longer term performances around, the Soviets need to:

- Revitalize their oil equipment industry with new plants.
- Modernize their oil-handling infrastructure, including pipelines, storage facilities, and ports.
- Learn Western methods of integrated project management that are based on profit rather than gross output.

Political and Social Tensions

Another reason for the economy's decline is that mounting political and social tensions have interacted with — and worsened — Soviet economic difficulties. Center-republic clashes over republic efforts to achieve independence have sparked labor protests and blockades, as well as entailed violence and loss of life, as in Lithuania in January 1991. Ethnic disputes also have fueled a variety of conflicts, many of them violent, between and within republics, and these conflicts at times have played havoc with the economy. The clashes between Armenia and Azerbaijan in early 1990, for example, dealt severe setbacks to economic performance in both republics.

Strikes, sparked partly by worsening consumer shortages and inflation, also have become an increasingly serious problem. According to Soviet statistics, the loss of work time because of strikes amounted to 10 million worker days in 1990, easily surpassing the previous record of 7 million in 1989. This year, the coal miner strikes that began in March aggravated energy shortages and contributed heavily to the sharp drop in production.

Finally, popular concern over the environment has forced plant closures that have made a substantial dent in industrial output. The impact on the chemical and wood products industries in 1990 was particularly severe. For example, a series of closings and partial reopenings of the Nairit chemical factory in Armenia cut supplies of plastics, synthetic rubber, and chemicals used to produce medicine. The shutdown of the Sloka pulp plant in Latvia removed the USSR's sole source of paper for computer punch cards, book and magazine covers, and cigarette packaging. In addition, public protests about the safety of nuclear powerplants in the last several years have contributed to delays in the construction of electric powerstations. Nuclear plants accounted for more than half of the shortfall in completing new electric power generating capacities in 1990.

Little Progress Toward a Market Economy

Although advocates of a market economy can take some consolation from important legislation passed in 1990, the Soviet central leadership has concentrated on stabilization since last November while putting market-oriented economic reforms on the back burner. In response, some republics, especially Russia, have attempted to seize the initiative from the center by proposing alternative reform programs. At the grassroots level, moreover, private economic initiatives remain alive despite cumbersome and frequently changing regulations.

The Reform Debate

As the Soviet economic crisis deepened in 1990, most economists and politicians came to realize that the reform and stabilization plan approved in December 1989 had been overtaken by events and was simply inadequate for the task at hand. The consensus ended there, however, and bickering over which of several proposed new game plans to adopt consumed most of the year.

The debate over a new economic program began in May 1990, when Premier Ryzhkov first presented the government's version to the Supreme Soviet. Ryzhkov's plan called for a 5-year transition to a "regulated market" economy and emphasized the need for price revisions as a first step toward deregulation. Legislators rejected the increase in bread prices he proposed for July, questioned the wisdom of other price hikes scheduled for January 1991, and remanded the program for further work.

Meanwhile, Boris Yeltsin, who was elected head of the Russian republic's legislature in May, began promoting an alternative program that would give first priority to supplanting state control of assets with private ownership and shorten the time allotted for the transition to a market economy from 5 years to "500 days." To keep Yeltsin from moving ahead on his own, Gorbachev reached an agreement with him to cosponsor a working group, chaired by Presidential

Council member Stanislav Shatalin, to develop another game plan combining elements of the Yeltsin and Ryzhkov programs. However, Ryzhkov and other members of his government were totally unwilling to cooperate with Shatalin. Gorbachev himself may have developed doubts as he realized the loss of central power the Shatalin plan would entail.

Gorbachev's Program: A Pledge to Implement Real Reforms

Gorbachev directed the preparation of another program that replaced Shatalin's link between stabilization and reform with an emphasis on stabilization now, reform later. The program, which the legislature approved in October, still called for a market economy to replace the Marxist system eventually. If strictly implemented, the program would deregulate most prices; sell off a substantial portion of state assets to joint-stock companies, labor collectives, cooperatives, and individuals; and introduce an element of genuine competition to an economy long dominated by monopolies.

Gorbachev's Economic Reform Program

Stabilization of Production and Finances

- Retain mandatory state orders for output and existing contracts between enterprises during the transition period to a market economy.
- Increase the supply of consumer goods and services by providing tax breaks for producers and privatizing retail trade and consumer services.
- Reduce the budget deficit to at most 3 percent of GNP by decreasing spending on investment, defense, and government administration and increasing revenues from turnover taxes.
- Raise interest rates administratively.
- Retain central controls on foreign exchange during the transition to a market economy.
- Sell state enterprises to generate revenue.

Privatization and Development of Markets

- Privatize state property by selling or transferring state enterprises to shareholders, labor collectives, cooperatives, individuals, and foreign firms; distributing land to farmers; and transferring housing to residents.
- Decontrol wholesale and retail prices in stages: set key wholesale prices centrally during 1991, while letting buyers and sellers negotiate prices for a wide range of industrial products, and remove controls on retail prices for all but a narrow range of consumer necessities by 1992.
- Replace the detailed regulation of wages with a new system of minimum wage rates that depend on worker skills.
- Reform the banking system by establishing a new system of central and commercial banks and putting the insurance system on a commercial basis.
- Move toward foreign trade with the ruble convertible to hard currency by passing new customs and currency laws and establishing internal markets for hard currency.

Expansion of Social Safety Net

- Set up state employment services to provide job search, retraining, and career guidance services and unemployment compensation.
- Pass a new pension law.
- Index personal incomes to the cost of living.

But With Potentially Fatal Flaws

The Gorbachev economic program, however, contained a number of fatal flaws:

- Like past reform programs, all of which have failed, it placed considerable responsibility for implementation on the central government bureaucracy, the very institution that stands to lose the most from the dismantling of the command economy.
- The increased economic autonomy it gave the republics fell far short of their demands, reducing the prospects for unionwide adherence.
- Its vague provisions and timetables made it subject to selective implementation and delay by the political leadership.

Presidential Decrees Emphasize Stabilization at the Expense of Reform

In late September 1990, the Supreme Soviet granted Gorbachev emergency powers to issue decrees on a broad range of economic matters without consulting the legislature. Most of those decrees attempt to stabilize the economy by bolstering central controls at the expense of economic reform.

Decree	Impact
Freezing economic ties between enterprises through 1991.	Intended to relieve supply bottlenecks but will slow development of wholesale trade, hamstring formation of new enterprises, and hinder republic efforts to privatize.
Allowing enterprises to negotiate wholesale price increases.	Intended as a positive step toward rational pricing but diminished by imposition of state-set price guidelines and 100-percent tax on excess profits.
Raising interest rates.	Intended to sop up excess rubles but relies on administrative fiat rather than allowing interest rates to respond to changing economic conditions.
Creating worker committees to control the distribution of food and other consumer goods.	Attempt to reduce theft and speculation is a return to administrative control reflecting the inability of the legal system and ruble to perform their functions.
Confiscating high-denomination ruble notes.	Attempt to confiscate black market profits also hurts legitimate small entrepreneurs who were unable to document past earnings.
Creating a central stabilization fund.	Effort to cushion the transition to new system by having successful enterprises finance enterprises operating at a loss; undermines efforts to force enterprises to operate more efficiently and become financially independent.
Allowing the KGB to inspect business inventories, documents, and cash.	Effort to prevent "economic sabotage" adds to problems of small businesses and cooperatives that have stockpiled scarce materials to protect against shortages; also dampens entrepreneurial initiative and foreign interest in joint ventures and investment.

The plan's malleability predictably has proved a curse for reform. The regime's initial implementing decrees have given a clear priority to stabilization, which is to be accomplished largely by administrative measures and a new reliance on the police and KGB to enforce the center's economic decrees. This emphasis has come largely at the expense of fundamental reforms the economy so urgently needs. Moreover, stabilization by administrative decree has proved elusive at a time when the center's commands carry increasingly less weight with republic leaders and enterprise managers.

The regime's retreat from reform has not been confined to the economic arena. Powerful groups, notably the Communist Party, the military, and defense industrialists, felt seriously threatened last fall by the devolution of power to the republics proposed in the Shatalin program. To placate these groups, Gorbachev has used the expanded presidential powers he requested and received in November to fight reformist efforts that the republics are pursuing.

Some Remaining Bright Spots on the Reform Front

Economic reform legislation passed in 1990 remains on the books and could provide a framework for developing private economic activity and markets at a future date — if the political climate improves. The USSR Supreme Soviet approved a wide array of laws on such fundamental issues as property rights, land use, enterprise rights, taxes, and banking. Most were drawn up in 1989 but became the subject of prolonged and divisive debates that stretched well into 1990.

Key Features of Reform Legislation Passed in 1990

Property	Broadens the definition of "socialist" property to include both public and individual ownership. Stops short of using the term "private property" but sanctions wider range of private enterprise activities than previously permitted.
Land	Gives peasant farmers the right to own land and pass it on to their heirs but not to sell, mortgage, or give it away. Gives republics considerable flexibility in implementation.
Enterprise Rights	Increases autonomy of state enterprises by removing some restrictions on how they can use their profits and by allowing them to establish independent associations not subject to ministerial control. Purports to give enterprises run by organizations of leaseholders, cooperatives, and shareholders equal status with state-run enterprises.
Income Tax	Union set two primary rate schedules: low for most of the work force and high for self-employed workers. Revisions, effective 1 April 1991, raise tax-free income level in response to retail price hikes, lower tax rates on high incomes, and end discrimination against the self-employed. Some republics have altered specific tax rates.
Profits Tax	Arbitrary confiscation by ministries replaced by a maximum 45-percent tax on profits of most state enterprises. Extraordinarily high profits to be confiscated. Maximum union rate reduced to 35 percent effective 1 April 1991. Some republics have set lower rates.
Banking	Establishes modern two-tier banking system, with central bank operating independently of the government and reporting directly to the Supreme Soviet. Independent republic central banks are to delegate control over money supply to central bank. All other banks are to become profit-seeking commercial ventures providing banking services to enterprises and consumers.

While the final package is a product of political compromise, it still breaks new ground in establishing the legal basis for a more market-oriented system.

The republics' growing self-assertiveness and willingness to pursue policies different from the center's also have given reformers reason to believe that their cause is no longer completely hostage to changes in the commitment of the union authorities. Market-oriented reform efforts in the republics during the past year have been intertwined closely with efforts to promote economic independence from the central government. All of the republics have issued declarations of sovereignty that proclaim authority over natural resources on their territory and control over their tax collection and banking systems, but republic reform efforts have varied greatly in pace and scope.

The reform climate has been most favorable in the Russian and Baltic republics. Russia has passed key legislation on property and land reforms as part of a professed commitment to the Shatalin program, which the center rejected. In addition, the republic government's most recent reform initiative calls for stepped up privatization and a phased decontrol of prices within 6 to 8 months. The Baltic republics also have begun implementing ambitious plans to privatize property, reduce budget subsidies, and create their own banks and convertible currencies. In addition to these reform efforts, the Russian and all three Baltic republics are actively promoting trade with the outside world and foreign investment on their territories.

Meanwhile, private economic initiatives at the grassroots level continue to expand and find new outlets. According to Soviet statistics, production by cooperative businesses increased by 75 percent in 1990, even though the number of restrictive regulations also grew. In agriculture, the formation of independent farms has continued, albeit slowly, with a minimum of official encouragement. The commodity exchanges sprouting in cities from the Baltic republics to Siberia are one of the most promising recent developments. So far, these exchanges bear little resemblance to the sophisticated Western organizations of the same name, but they do provide a source of badly needed supplies for factory managers who no longer can rely on the crumbling central distribution system. In addition, they are much more efficient than barter deals arranged one at a time.

Given several years to develop in a political environment conducive to their growth, these exchanges and other fledgling market institutions could contribute greatly to economic recovery. The Soviet economy's problems, however, are so severe that an assessment of its prospects must have a shorter term focus.

Grim Prospects in the Near Term

The Soviet economy is in such turmoil that its performance is impossible to estimate by relying totally on the methods used when the economic system was relatively stable. All things considered, the Intelligence Community believes real Soviet gross national product (GNP) declined about 4 to 5 percent in 1990 (Appendix A). Given the great disruption in the economy, however, GNP numbers alone tell much less of a story than usual.

There is no doubt that 1991 will be a worse year for the Soviet economy than 1990, and, in all likelihood, it will be sharply worse. Despite the union leadership's renewed expressions of support for market-oriented reforms and an agreement by the center and nine republics to implement anticrisis measures, the politics of both reform and stabilization most likely will continue in turmoil. In addition, the economy most likely will continue to suffer from sharp shifts in government policy. Most unofficial Soviet forecasts place the likely decline in output at 10 to 20 percent, and, according to some estimates — which CIA and DIA consider extreme — output could fall as much as 40 percent. Moreover, declining output will not be the only problem. The Soviets also will have to face the consequences of excessive budget deficits, rapid expansion of the money supply, rising inflation, and deteriorating external economic relations.

The Leadership's Anticrisis Program

The central leadership recently responded to the economy's accelerating deterioration with yet another effort at stabilization. This time, the Soviets have called it an "action program for leading the economy out of crisis." The draft anticrisis program, issued in early April, includes a host of measures aimed at stabilizing the production and distribution of goods, especially food and other consumer necessities, and bringing the budget deficit and money supply under control. Some of these measures have been tried before with little success, but others, such as removing restrictions on overtime work and reopening factories closed for environmental reasons, have not been tested yet. To enhance its appeal to reformers, the program also calls for speeding up the privatization of housing, retail trade, consumer services, and small industrial enterprises and for completing the transition to "primarily free price formation" by 1 October 1992.

Prospects for the anticrisis program depend less on these provisions, however, than on whether the center and the republics can resolve the impasse in their political and economic relations and on whether concrete actions will follow the promises in the program. The agreement that Gorbachev and the leaders of nine republics reached on 23 April 1991 may be a promising sign for future cooperation and could give new momentum to economic reform. Although not all the details of this accord are known, Gorbachev apparently consented to a devolution of political and economic power to the republics in return for their support of the center's stabilization measures and agreement to sign a new union treaty soon. Reportedly, the republics will be free to pursue economic reform at their own pace. If so, they will be given a chance to demonstrate that their claims of being more committed than the center to free market principles are more than empty boasts. However, if the accord is to be sustained for more than a few months, the center will have to permit the republics a much larger role in central decisionmaking.

Falling Output and Rising Inflation

The course Gorbachev was pursuing prior to 23 April – of trying to stabilize the economy and maintain the union through a mixture of administrative measures and intimidation – already has led to a sharp drop in output. If this course is maintained, real Soviet GNP is likely to decline 10 to 15 percent in 1991, and the annual rate of inflation easily could exceed 100 percent.

If the regime resorts to more repressive policies, such as introducing presidential rule in the republics and imposing severe punishment for failure to comply with central orders, the results would depend on the population's response. Public acceptance of such a step back toward the old system probably would help stem the decline in output and the rise in prices in the short run. However, the regime would run a serious risk of popular resistance in the form of demonstrations, strikes, and, possibly, outright rebellions. Under these conditions, real GNP would fall at least 15 percent, and inflation could spiral out of control.

Another possibility is that the 23 April agreement could serve as the basis for sustained improvement in center-republic relations and a renewal of reform. This would help to reduce confusion over lines of authority, promote interrepublic trade and thus ease supply bottlenecks, and facilitate center-republic cooperation on efforts to reduce the budget deficit. The decline in real GNP this year probably still would be close to 10 percent, but inflationary pressures could ease. In the next few years, prospects for stabilizing output would improve, but the freeing of prices that serious reform efforts require probably would lead to extremely high inflation.

Key Measures in the Anticrisis Program

Center-Republic Relations

- Suspend republic and local bodies' decisions that contradict agreed center-republic policies on budget and other issues; relieve guilty officials of positions and prosecute them.
- Pass legislation obligating lower level executive bodies to carry out decisions of higher bodies.
- Trade at world prices with republics that have refused to sign the union treaty.
- Give republics responsibility for the privatization of some union enterprises.
- Work out new arrangements for distributing hard currency funds and foreign debt between the center and republics.

Stabilization of Production and Distribution

- Ban strikes during the period of anticrisis program; increase penalties for illegal strikes.
- Remove restrictions on overtime work; suspend legislation adopted in 1990-91 that causes reductions in working time.
- Direct urban workers and military personnel to help with harvest.
- Introduce a "special mode" of operating transportation and communications systems.
- Restart most important production facilities stopped for ecological reasons.
- Shut down inefficient production capacities.
- Sell unused inventories of material and equipment.

Special Help for Agriculture

- Strengthen wage and price incentives to deliver more supplies to agriculture than in 1990; stiffen penalties for reduced deliveries.
- Allow farmers to sell up to 30 percent of their output at free market prices in 1991.
- Allow retail stores and restaurants to buy food from farms and people with private plots at free market prices.
- Grant credit on advantageous terms to farms in financial difficulty.

Stabilization of Financial Situation

- Work out plan for reducing budget expenditures in second half of 1991 at union, republic, and local levels.
- Suspend programs for which financing is scheduled to begin after 1 July 1991; impose moratorium on new programs.
- Replace sales tax and turnover tax with value added tax and excise duties as of 1992.
- Authorize the state bank to establish ceilings on credits for budget spending in 1991 by center and republics.
- Reduce imports by at least 10 to 15 percent by end of 1991.

Development of Markets and Private Economic Activity

- Privatize enterprises in retail trade, restaurants, personal services, and automobile repair, plus small industrial enterprises on a priority basis.
- Abolish restrictions on cooperatives engaged in retail trade in the second quarter of 1991.
- Privatize housing on a voluntary and predominantly free basis.
- Complete the transition to primarily free price formation by 1 October 1992; introduce "special mechanism" for regulating the prices that monopoly producers charge.
- Pass legislation on repatriating profits and hard currency investment.

Expansion of Social Safety Net

- Pass legislation on indexing incomes to the cost of living.
- Complete the formation of a state employment service network and employment funds in the first half of 1991; complete the formation of a job retraining and vocational guidance system by the end of 1991.
- Introduce paid public work.

Hard Currency Crunch

Whatever course the center pursues, the Soviet Union will face tough choices this year in trying to halt the deterioration of its external financial position. Oil exports will continue to decline as a result of problems in domestic production and the soft world market. Depending on world prices, hard currency revenues from oil exports could fall 25 to 60 percent. Markets will remain weak for Soviet exports of manufactured goods, including arms. Meanwhile, the demand for imports, especially of agricultural products, is likely to remain high.

The Soviets also will face a rising debt service burden in the form of interest charges and scheduled payments of principal on medium- and long-term debts. Some short-term credits that Western lenders have been refusing to roll over also will have to be repaid, and the pressure to eliminate arrears in payments to Western firms will be great. Some of the credits that Western governments already have pledged have been disbursed slowly, probably because of Western displeasure over center-republic confrontations and the lack of progress on economic reforms. Moreover, the Soviets have not drawn heavily on credits tied to nonfood goods. Instead, the drastic import reductions in the first quarter of 1991 indicate that the USSR has chosen to limit expenditures rather than face comprehensive debt rescheduling. These import cuts have hurt domestic production, however, and the Soviets will have difficulty continuing along this course.

Tighter Belts All Around

Given the sharp drop in economic output that appears all but inevitable this year, nearly all claimants will be left with fewer resources. The increasing pressure to reduce the budget deficit but still improve the social safety net most likely means continued reductions in both investment and defense. Indeed, real reductions from the 1990 level of defense spending apparently have been planned already and are likely to occur in 1991 regardless of the direction center-republic relations take. If the center resorts to more repressive tactics, the military might succeed in obtaining a larger share of the economy's output, but the level of economic output most likely would drop so sharply that real outlays on defense would fall as well. A center-republic accord, in contrast, would improve general economic prospects slightly. At the same time, the accord most likely would give the republics a greater share of tax revenues and reduce the funds available for defense and other programs financed by the central government.

Because of the erosion in the quality of life that has occurred during the past 2 years, Soviet consumers are reluctant to endure further hardships. Unfortunately, no relief is in sight. The drop in output in the first quarter extended to manufactured consumer goods, and the defense conversion program has not provided the benefits

Defense Budget Up, But Not as Much as Prices

In January 1991, the Supreme Soviet approved a 96.6-billion-ruble defense budget — up from the 1990 budget of 70.9 billion rubles. Soviet officials say the new figure includes compensation for large increases in the prices of defense goods and actually reflects a cut of about 10 percent in real terms. Draft budget figures indicate that real procurement will fall about 20 percent, while real outlays on personnel and operations and maintenance will rise 15 percent, probably in connection with the costs of withdrawal from Eastern Europe. Real spending on research, development, testing, and engineering originally was slated for a sharp decline, but the military is struggling to minimize cuts in this area.

The published Soviet defense budget captures only about half of the outlays actually devoted to defense and, as a result, is seriously flawed as an indicator of changes in the allocation of resources to defense. Nonetheless, analysis of Soviet military programs indicates that total defense spending, as official Soviet sources claim, will continue to fall in 1991.

that the leadership had hoped for. Moreover, tight limits on the availability of hard currency will make it increasingly difficult to boost imports. Perhaps worst of all are the twin threats of rising unemployment and accelerating consumer inflation.

Under these circumstances, it is no surprise that consumer hardships have become a severe liability for political leaders at all levels of government. The recent prolonged strikes by coal miners and sporadic protests by other workers were directed at the policies of the central government and played a role in moving the center back toward a dialogue with reform-minded republic leaders. But these demonstrations were also an indication of popular impatience with all levels of government for not improving standards of living. Great political skill will be needed to retain — and, in the case of the central government, regain — popular trust and to put through effective but often initially painful reform measures. However, the alternative is a completely bleak Soviet future.

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Appendix A

Problems of Measuring Soviet Economic Performance

The CIA has been involved in measuring Soviet economic performance since the early 1950s and has been the principal source of Western estimates since the mid-1960s. Over the years, the primary focus of the estimates has been to provide a quantitative basis for analysis, like that in this paper, of changes in the Soviet economy. In addition, comparisons of the sizes of the Soviet and US economies have been produced. These two estimating efforts are largely distinct and are discussed in separate sections of this appendix.

In the last few years, CIA estimates of Soviet economic performance have become a subject of increasing criticism. Although some critics have claimed that these estimates understate the growth that has occurred over the years, most of the recent critics maintain that CIA has overestimated both the growth and the size of the Soviet economy. These critics' arguments draw in part on a surge of attacks on official Soviet statistics, including some of the data used in the estimating process, by Soviet economists encouraged by *glasnost*. Other arguments refer to the present turmoil in the USSR and Eastern Europe and question whether CIA estimates have provided an adequate picture of Soviet economic difficulties as they have developed.

Estimates of Economic Growth

Measuring real economic growth is a difficult task, even in Western countries, where data are far better than in the Soviet Union; however, changes in the level of production that have occurred in the USSR over the past year have been unusually difficult to quantify. For one thing, changes in Soviet reporting have left gaps in some of the data. In addition, rapid changes in the economy have increased the degree of uncertainty normally involved in the estimates.

Over many years, with only a few exceptions, CIA estimates have shown notably slower overall growth than official Soviet summary statistics. This can be seen in the following:

Percent Change in Soviet GNP

	CIA	Official Soviet	Gap
1981-85	1.7	3.7	2.0
1986-88	2.5	3.9	1.4
1989	1.5	3.0	1.5

However, for last year, the routine application of standard CIA estimating methods indicates that the drop in Soviet GNP was only slightly worse than the 2-percent decline that the Soviets officially reported. Part of the reason is that one of the key assumptions used in estimating changes in Soviet GNP may no longer be valid under current economic conditions. Estimates of growth are based primarily on detailed data on the output of individual products included in the various GNP components. In most instances, the data reflect quantities of output in physical units, such as tons of oil or liters of vodka, valued at base-year prices per unit. Over the years, CIA and many students of the Soviet economy have looked long and hard at the reliability of these data and have found them generally acceptable.

However, these data reflect changes in total output, including materials used in production, while the standard definition of GNP includes only final output, such as goods and services for consumption and investment, or, equivalently, the value added by the primary inputs, such as labor and capital, used in production. The impact of using data on total output rather than value added has been examined and, most of the time, this simplification has not led to substantial errors in the estimates. Given the breakdown that occurred in the Soviet transportation and distribution systems last year, however, when materials were tied up in freight cars and warehouses, value added almost certainly fell more than total output. Data reported by an official of the Soviet State Planning Committee suggest that a correction for this problem might lower the estimate of the change in 1990 GNP by 1 or 2 percentage points.

Another measurement problem that may have worsened in 1990 results from using Soviet data on ruble values of output in supposedly constant prices to calculate the change in some GNP components. Almost all Western experts, and now most Soviet economists, believe that these data overstate output growth — and understate inflation — because new products are introduced at prices that include overly generous allowances for improvements in quality that are often illusory. These data have not had a severe impact on CIA estimates in the past because they are used to estimate only about 10 percent of total GNP and because Soviet inflation has been slow by Western standards. Last year, however, price controls weakened seriously, and inflation accelerated sharply. The estimate of the change in GNP might be reduced by roughly one-half of a percentage point on this count.

The estimate of the decline in GNP last year, corrected for both of the problems reviewed above, is about -4 to -5 percent. However, an adjustment for underreporting of physical data might offset part of this reduction. In the past, production managers had incentives to overstate the output they reported to the statistical authorities because a considerable share of their incomes — and that of their workers — depended on reported output. Incentives for underreporting may have increased in 1990 as acute shortages made barter deals between factories more attractive than deliveries to the central supply system. Enterprises also may be underreporting production to reduce their tax obligations. Unfortunately, the impact of such a change in reporting is nearly impossible to quantify.

Even the corrected GNP estimate does not reflect the full impact of 1990's economic decline on consumers and other final users of output. One reason is that GNP includes depreciation, which is a cost of production but does not yield direct benefits to users. At a time when repairs of aging plant and equipment are taking up a growing share of output, Soviet GNP excluding depreciation (or net national product, as it is called in the United States) almost certainly has declined by more than total GNP.

More important, ubiquitous shortages dealt a serious blow to consumer welfare in 1990. The loss of leisure time as a result of searching for goods and standing in line, although difficult to quantify, must have been substantial. In addition, the combined effects of shortages and inflation resulted in a rising "misery index" and growing popular anxiety about future living standards.

Comparisons of Economic Size

Comparing the size of the Soviet economy with that of the United States is an even more complicated task than estimating economic trends. During the past year, a rising tide of critical attention has been focused on the comparisons conducted by both the CIA and the Soviet State Committee for Statistics.[1]

CIA currently estimates that total Soviet GNP in 1989 was 39 percent of US GNP when valued in ruble prices and 66 percent of US GNP in dollar prices. The geometric mean of these ratios (a generally accepted single estimate of relative size) is 51 percent. Soviet GNP appears smaller in rubles than in dollars because goods and services that are relatively abundant in the USSR are relatively cheap there and relatively expensive in the United States. This sort of inverse relationship between relative prices and relative quantities is found in almost all international economic comparisons.

Although the geometric mean often is used to summarize US-Soviet GNP comparisons, the gap between the ruble and dollar measures provides an important indication of the difficulty of comparing two economies as disparate as those of the United States and the Soviet Union. In part, this gap also reflects the much greater sophistication of US technology. In general, Soviet production processes require large inputs of labor, which is much more expensive in the United States.

As CIA has acknowledged, its comparisons almost certainly overstate the size of Soviet GNP because complete adjustments for the inferior quality and limited variety of Soviet goods and services are not possible. To calculate the ratios of ruble and dollar prices on which these comparisons are based, Soviet and US products are matched as closely as possible in size, design, durability, and other qualitative features. However, the remaining quality gap is substantial. For example, Soviet consumer goods lack style and variety, retail shopping conditions are primitive, those who provide education are often poorly trained, and health care is miserable. Nonetheless, until better data are obtained, the only further adjustments that could be made for quality differences would be arbitrary.

In a promising sign for the future, the Soviet State Committee for Statistics has begun participating in the ongoing United Nations project comparing economies worldwide. As one result of this work, Soviet statisticians recently have published "experimental" comparisons of Soviet and US GNP that reflect substantial downward revisions of their earlier claims and that also are lower than CIA estimates, as shown in the tabulation below:

USSR as Percent of United States[1]

	CIA		Official Soviet	
			Previous	Experimental
	1989	**1985**	**1985**	**1985**
Total GNP	51	54	56	43
GNP per capita	44	46	48	37
Consumption per capita	31	32	31	26

[1] Geometric mean.

[1] For further discussion of this issue, see the statement, "Estimates of the Soviet Economy," presented by George Kolt, Director of Soviet Analysis, Central Intelligence Agency, to the Senate Foreign Relations Committee, July 1990.

CIA is studying these new estimates and looking forward to the results of further Soviet work in this area. However, the new estimates need to be interpreted carefully because they reflect a change from the previous UN practice, which CIA continues to follow. In the past, the United Nations assumed that the productivity of an hour of labor used to provide such services as health, education, and government administration was the same in all countries. In the latest UN comparisons (phase V), however, the productivity of labor services in several East European countries — including Hungary, which is used as a link country in the new Soviet comparisons with the United States — is assumed to be only half that in the rest of the world. This new assumption, which has aroused controversy, is responsible for a substantial portion of the downward revision in UN estimates of the relative size of the East European economies.

Appendix B

USSR: Selected Economic Indicators

USSR: Total Trade, 1981-90

USSR: Estimated Hard Currency Balance of Payments, 1975-90

USSR: Estimated Hard Currency Debt to the West, 1975-90

USSR: Selected Indicators of Agricultural Output, 1970-90

USSR: Gross Fixed Capital Investment, 1970-90

USSR: Total Trade, 1981-90
(billion current US dollars)

	Average Annual 1981-85	1986	1987	1988	1989	1990
Total Soviet exports	**87.4**	**97.0**	**107.7**	**110.7**	**109.3**	**104.1**
Communist	49.5	65.0	70.0	71.0	67.1	52.1
Developed countries	25.2	18.8	22.7	24.6	26.6	38.7
Developing countries	12.7	13.2	14.9	15.2	15.7	13.3
Total Soviet imports	**79.1**	**88.9**	**96.0**	**107.3**	**114.7**	**120.9**
Communist	44.7	59.4	66.6	71.6	71.0	61.4
Developed countries	24.9	22.7	22.1	27.2	33.4	48.6
Developing countries	9.5	6.8	7.3	8.5	10.3	11.0

Figures for 1990 are preliminary.
Includes both hard currency trade and trade conducted with soft currency countries.
Components may not add exactly to total because of rounding.

USSR: Estimated Hard Currency Balance of Payments, 1975-90
(million current US dollars)

	1975	1980	1985	1986	1987	1988	1989	1990
Current account balance	-4,565	1,470	137	1,383	5,118	1,183	-4,419	-4,500
Merchandise trade	-4,804	1,814	519	2,013	6,164	2,634	-2,115	-1,300
Exports (free on board)	9,453	27,874	26,400	25,111	29,092	31,165	32,931	35,500
Imports (free on board)	14,257	26,960	25,881	23,098	22,928	28,531	35,046	36,800
Net interest	-521	-1,234	-1,482	-1,730	-2,146	-2,551	-3,404	-4,300
Other invisibles and transfers	760	890	1,100	1,100	1,100	1,100	1,100	1,100
Capital account balance	6,981	284	1,869	1,795	-839	965	6,807	7,573
Change in gross debt	6,786	-792	6,804	6,811	4,911	1,579	8,515	2,800
Official debt	1,492	-280	463	391	380	-1,700	1,700	NA
Commercial debt	5,294	-512	6,340	6,420	4,532	3,279	6,815	NA
Net change in assets in Western banks	-163	-35	1,787	1,595	-527	1,119	-824	-6,500
Estimated exchange rate effect	-22	-411	3,248	3,322	4,977	-2,205	532	2,452
Net credit to less developed countries	715	950	1,700	4,100	4,800	5,500	5,665	3,775
Gold sales	725	1,580	1,800	4,000	3,500	3,800	3,665	4,500
Net errors and omissions	-2,416	-1,754	-2,006	-3,178	-4,279	-2,148	-2,388	-3,073

Figures for 1989 and 1990 are preliminary.
NA = Not available.
Net errors and omissions include hard currency assistance to and trade with communist countries, credits to developed Western countries to finance sales of oil, and other nonspecified hard currency expenditures, as well as errors and omissions in other line items of the accounts.

USSR: Estimated Hard Currency Debt to the West, 1975-90
(billion current US dollars)

	1975	1980	1985	1986	1987	1988	1989	1990
Gross debt	12.5	20.5	29.0	35.8	40.8	42.3	50.8	53.6
Commercial debt	8.2	11.0	19.5	25.9	30.4	33.7	40.5	NA
Government and government-backed debt	4.3	9.5	9.5	9.9	10.3	8.6	10.3	NA
Assets in Western banks	3.8	10.0	13.3	14.9	14.4	15.5	14.5	8.2
Net debt	8.7	10.6	15.7	20.9	26.4	26.8	36.3	45.4

Figures for 1989 and 1990 are preliminary.
Estimates of government-backed and commercial debt are measured in current dollars and reflect fluctuations in exchange rates. Commercial debt also includes estimates for promissory notes held outside banks.
Components may not add exactly to total because of rounding.

USSR: Selected Indicators of Agricultural Output, 1970-90

	1970	1975	1980	1985	1986	1987	1988	1989	1990
Value of output (billion rubles)	112.5	109.4	113.7	125.8	136.7	133.8	133.6	138.9	134.0
Commodity production (million metric tons)									
Grain	186.8	140.1	189.1	191.7	210.1	211.4	195.1	211.0	238.0
Potatoes	96.8	88.7	67.0	73.0	87.2	75.9	62.7	72.0	63.7
Sugar beets	78.9	66.3	81.0	82.4	79.3	90.7	88.0	97.4	81.2
Sunflower seed	6.1	5.0	4.6	5.3	5.3	6.1	6.2	7.1	6.4
Cotton	6.9	7.9	9.1	8.8	8.2	8.1	8.7	8.6	8.3
Vegetables	21.2	23.4	27.3	28.1	29.8	29.2	29.3	28.7	26.4
Meat	12.3	15.0	15.1	17.1	18.1	18.9	19.7	20.1	19.9
Milk	83.0	90.8	90.9	98.6	102.2	103.7	106.8	108.5	108.7
Wool	0.42	0.45	0.44	0.45	0.47	0.46	0.48	0.48	0.47
Eggs (billion)	40.7	57.4	67.9	77.3	80.7	82.7	85.2	84.9	82.0

Figures for 1990 are preliminary.
Value of output is net of feed, seed, and waste, in constant 1982 prices.
Grain figure is bunker weight. To be comparable to Western measures, an average reduction of 11 percent is required.

USSR: Gross Fixed Capital Investment, 1970-90
(billion 1984 rubles)

	1970	1975	1980	1985	1986	1987	1988	1989	1990
Total Investment	92.2	128.5	150.9	179.5	194.4	205.4	218.2	228.5	219.4
By Source:									
State	79.4	111.8	133.1	157.9	172.0	182.6	192.9	200.8	190.0
Collective farms	8.6	12.2	13.3	15.4	15.5	15.2	16.5	18.1	NA
Consumer and housing cooperatives	2.6	2.7	2.9	3.7	4.1	4.3	4.7	5.3	NA
Private housing	1.6	1.8	1.6	2.5	2.8	3.3	4.1	4.3	NA
By Sector:									
Industry	32.5	44.9	53.3	65.5	71.0	75.0	79.5	85.7	NA
Agriculture	16.0	26.1	29.8	31.5	33.5	34.4	36.5	38.4	NA
Transportation and communications	9.0	14.4	18.1	21.9	22.8	24.0	25.1	21.6	NA
Construction	3.3	4.8	6.0	6.1	6.8	6.9	8.3	10.6	NA
Housing	15.8	19.2	21.1	28.1	30.9	33.5	35.6	37.7	NA
Trade and services	15.6	19.1	22.6	26.4	29.4	31.6	33.2	34.5	NA

Source: *Narodnoye khozyaystvo SSSR*, 1989 and earlier years; and official Soviet economic statistics for 1990.
NA = Not available.